



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

September 25, 2012

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: *Raymond Flores*
Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)
Gary Moore, On-Scene Coordinator (6SF-PR)

Site: DELTA SHIPYARD

Case#: 42764

SDG#: MF6AK6

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.



9522650

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: September 21, 2012
TO: Marvely Humphrey, ESAT PO, Region 6 EPA
FROM: Linda Hoffman, Data Reviewer, ESAT *LH*
THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT *DGJ*
SUBJECT: CLP Data Review

Contract No.: EP-W-06-030
TO No.: 030
Task/Sub-Task: 2-12
ESAT Doc. No.: B030-212-0089
TDF No.: 6-12-503B
ESAT File No.: I-0575

Attached is the data review summary for Case # 42764

SDG # MF6AK6
Site Delta Shipyard

COMMENTS:

I. LEVEL OF DATA REVIEW

Modified CADRE Review was performed for this data package.

II. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

The CCS detected a contractually noncompliant item that did not affect technical usability of the results.

III. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

Some results were qualified for technical problems. The significant problem is addressed below.

The antimony, barium, and thallium matrix spike recoveries were below the QC limit.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	42764	SITE	Delta Shipyard
LABORATORY	CHEM	NO. OF SAMPLES	17
CONTRACT#	EP-W-09-038	MATRIX	1 Water/16 Soil
SDG#	MF6AK6	REVIEWER (IF NOT ESB)	ESAT
SOW#	ISM01.3	REVIEWER'S NAME	Linda Hoffman
SF#	303DD2GC	COMPLETION DATE	September 21, 2012

SAMPLE NO.	MF6AK6	MF6AL6	MF6AM0	MF6AM4	MF6AN1
	MF6AK7	MF6AL7	MF6AM1	MF6AM5	
	MF6AL4	MF6AL8	MF6AM2	MF6AM6	
	MF6AL5	MF6AL9	MF6AM3	MF6AM7	

DATA ASSESSMENT SUMMARY

	ICP	HG
1. HOLDING TIMES	O	O
2. CALIBRATIONS	O	O
3. BLANKS	O	O
4. MATRIX SPIKES	M	O
5. DUPLICATE ANALYSIS	O	O
6. ICP QC	M	
7. LCS	O	
8. SAMPLE VERIFICATION	O	O
9. OTHER QC	N/A	N/A
10. OVERALL ASSESSMENT	M	O

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: Matrix spike recoveries were below the QC limit for antimony, barium, manganese, thallium, and zinc. The copper serial dilution difference exceeded the expanded QC limit for soils.

**COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW**

CASE 42764 SDG MF6AK6 SITE Delta Shipyard LAB CHEM

COMMENTS: This SDG consisted of 1 water and 16 soil samples for total metals (by ICP-AES) and mercury analyses following CLP SOW ISM01.3. The sampler designated soil sample MF6AL4 for laboratory QC analyses and water sample MF6AN1 as a rinsate.

The SOW requires that the soil sample results be adjusted for moisture content and dilution, which raised the adjusted QLs above the CRQLs specified in the SOW. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

The analytes of concern with the CRQLs, which are in parentheses, as the desired detection limits were arsenic (1 mg/kg) and barium (20 mg/kg). All soil samples contained both analytes of concern at concentrations over the desired detection limits. The laboratory diluted (up to 10X) and reanalyzed soil samples MF6AK6, MF6AK7, MF6AL9, MF6AM0, MF6AM2, and MF6AM7 because of high concentrations of barium and/or iron.

Modified CADRE review was performed for this package as requested by the Region. For this review option, the CCS and CADRE primarily determine the laboratory contractual compliance and the technical usability of the sample results, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the CADRE report. The CADRE narrative for the SDG is attached to this report as an addendum for additional information.

DATA ASSESSMENT: The QC problems affecting data usability are addressed below.

- Because of laboratory blank readings, the results <SQL/CRQLs for cobalt for sample MF6AL9 and iron and zinc for sample MF6AN1 should be considered undetected and were flagged "U" at the SQL/CRQLs on the DST.
- Rinsate sample MF6AN1 contained barium, beryllium, calcium, manganese, and mercury at concentrations below the CRQLs. The reviewer was unable to assess the effect of equipment contamination because information associating the samples with the rinsate was unavailable.
- The reviewer qualified the soil sample results for antimony, barium, and zinc as estimated and biased low because the pre-digestion matrix spike recoveries for these analytes were below the 75% QC limit and the post-digestion matrix spike analyses indicated a low bias effect.

**INORGANIC QA REVIEW
CONTINUATION PAGE**

CASE 42764 SDG MF6AK6 SITE Delta Shipyard LAB CHEM

- The reviewer qualified the manganese and thallium soil sample results as estimated because the pre-digestion matrix spike recoveries for these analytes were below the 75% QC limit. The post-digestion matrix spike analyses did not indicate a bias effect.
- The reviewer qualified the copper soil sample results as estimated because the serial dilution difference for this analyte exceeded the expanded QC limit for soils.

OVERALL ASSESSMENT: Some results were qualified for all soil samples because of problems with matrix spike recoveries and a serial dilution difference. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist. The DST included in this report is the final version.

The laboratory response to the CCS was received and placed at the beginning of the data package. The received page should be added to the CSF package as additional information. The laboratory was also contacted by the Region for a few reporting issues (see Resubmission Request). The laboratory responded to the Regional request and submitted the required corrected forms. The resubmitted pages were placed at the beginning of the data package and should used to replace the corresponding pages in the CSF package.

INORGANIC ACRONYMS

CADRE	Computer-Aided Data Review and Evaluation
CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CN	Cyanide
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DST	Data Summary Table
HG	Mercury
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
NFG	National Functional Guidelines
PE	Performance Evaluation
%D	Percent Difference
%R	Percent Recovery
%RI	Percent Relative Intensity
%RSD	Percent Relative Standard Deviation
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RPD	Relative Percent Difference
RSCC	Regional Sample Control Center
SDG	Sample Delivery Group
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
TAL	Target Analyte List

HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number
SDG: SDG Number
EPASAMP: EPA Sample Number
LABID: Laboratory File/Sample ID
MATRIX: Sample Matrix
QCCOD: Sample QC Code
SMPQUAL: Sample Qualifier
ANDATE: Sample Analysis Date
ANTIME: Sample Analysis Time
CASNUM: Compound CAS Number
ANALYTE: Compound Name
CONC: Compound Concentration
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see
Inorganic Data Qualifier Definitions on the next page)
UNITS: Concentration Units
ADJCRQL: Adjusted Contract Required Quantitation Limit Value
SMPDATE: Sampling Date
PRPDATE: Sample Preparation Date
LRDATE: Laboratory Receipt Date
LEVEL: Sample Level
PERSOLD: Sample Percent Solids
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water
Samples)
FINLVOL: Final Sample Volume
METHOD: Method of Analysis
STATLOC: Station Location

Disclaimer: ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U** Not detected at reported quantitation limit.
- L** Reported concentration is between the MDL and the CRQL.
- J** Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.
- R** Result is unusable.
- F** A possibility of a false negative exists.
- UC** Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.
- +** High biased. Actual concentration may be lower than the concentration reported.
- Low biased. Actual concentration may be higher than the concentration reported.
- W** The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No.	42764	SDG No.	MF6AK6	SDG Nos. To Follow	Mod. Ref. No.	Date Rec	09/04/12
EPA Lab ID:	CHEM		ORIGINALS		YES	NO	N/A
Lab location:	Mountainside, NJ		CUSTODY SEALS				
Region:	6	Audit No.:	42764/MF6AK6		1. Present on package?	X	
Resubmitted CSF?	Yes	No	X	2. Intact upon receipt?		X	
Box No(s):	1		FORM DC-2				
COMMENTS:			3. Numbering scheme accurate?		X		
			4. Are enclosed documents listed?		X		
			5. Are listed documents enclosed?		X		
Item	Description		FORM DC-1				
			6. Present?		X		
			7. Complete?		X		
			8. Accurate?		X		
			TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)				
			9. Signed?		X		
			10. Dated?		X		
			AIRBILLS/AIRBILL STICKER				
			11. Present?		X		
			12. Signed?		X		
			13. Dated?		X		
			SAMPLE TAGS				
			14. Does DC-1 list tags as being included?		X		
			15. Present?		X		
			OTHER DOCUMENTS				
			16. Complete?		X		
			17. Legible?		X		
			18. Original?		X		
			18a. If "NO", does the copy indicate where original documents are located?				X
Over for additional comments.							

Audited
Audited

Linda Hoffman/ESAT Data Reviewer

Date 09/07/12

Date

Signature

Printed Name/Title

DC-2

In Reference To Case No(s):
42764 SDG: MF6AK6 (I-0575)

**Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM**

Resubmission Request

Laboratory Name: CHEM
Lab Contact: Divya Mehta

Region: 6
Regional Contact: Raymond Flores - EPA
ESAT Reviewer: Linda Hoffman - ESAT

In reference to data for the following fractions:

ICP-AES

Summary of Questions/Issues:

1. On Form 5, the entries in the "Spike Sample Result" and "Spike Added" columns could not be reproduced. In addition, a % Solids result of 0.00 was entered instead of 55.4. Please correct and resubmit this form and the Form 1s as necessary.
2. On Forms 1 and 8, the copper, vanadium, and zinc results were not "E"-flagged although the %Ds were >10% and the initial sample results were >50X the MDLs reported on the Form 9 on page 95 (ISM01.3, p. B-34, sec. 3.4.10.2.5). Please correct and resubmit Forms 1 and 8 as necessary.

NOTE: Any submitted laboratory resubmission should be clearly marked as "Additional Data" with a cover letter included describing what data is being delivered, which Case the data pertains, and who requested the data (ISM01.3, p. B-8, sec. 2.2.1). Custody seals are required only for regular mail shipments.

Please respond to the above item **within 6 business days (ISM01.3, p. B-8, sec. 2.2)** by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

USEPA CLP Inorganics COC (REGION COPY)

DateShipped: 8/9/2012

CarrierName: FedEx

AirbillNo: 793888195580

CHAIN OF CUSTODY RECORD

Delta Shipyards/LA

Case #: 42764

Cooler #: 2

No: 6-080912-165221-0060

Lab: ChemTech Consulting Group

Lab Contact: Snehal Mehta

Lab Phone: 908-789-8900

Special Instructions: 21 day turnaround

Field QC: MF6AN1

Analysis Key: TM + Hg=Total Metals + Hg

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

USEPA CLP Inorganics COC (REGION COPY)

DateShipped: 8/9/2012

CarrierName: FedEx

Airbill No: 793884213809

CHAIN OF CUSTODY RECORD

Delta Shipyards/LA

Case #: 42764

Coaster #: 1

No: 6-080912-132305-0052

Lab: ChemTech Consulting Group

Lab Contact: Snehal Mehta

Lab Phone: 908-789-8900

Sample(s) to be used for Lab QC: MF6AL4 - Special Instructions: 21 day turnaround

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: TM + Hg=Total Metals + Hg

ADDENDUM

CADRE NARRATIVE

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Blanks

Blanks	Hg
NCB05	The following samples have no detected analytes. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
PBS01	Mercury PBS01
Blanks	Hg
NCB06	The following samples have no detected analytes. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
PBS01	Mercury PBS01
Blanks	Hg
ND15	The following samples have analyte results greater than or equal to MDLs. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes. MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1 Mercury MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1
Blanks	Hg
ND16	The following samples have analyte results greater than or equal to MDLs. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes. MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1 Mercury MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
NCB05	The following samples have no detected analytes. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	MF6AL4L
	Antimony MF6AL4L
Blanks	ICP_AES
NCB06	The following samples have no detected analytes. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	PBW01, MF6AN1, MF6AL4L
	Vanadium PBW01, MF6AN1
	Sodium PBW01, MF6AN1
	Chromium MF6AN1
	Barium PBW01
	Beryllium PBW01
	Aluminum PBW01, MF6AN1
	Antimony MF6AL4L
	Copper MF6AN1
	Magnesium MF6AN1
	Iron PBW01
Blanks	ICP_AES
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF6AL4L, MF6AL4A, MF6AN1
	Nickel MF6AL4L
	Antimony MF6AL4A
	Iron MF6AN1
Blanks	ICP_AES
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF6AN1, PBW01, MF6AL4L, MF6AL9, MF6AL4A, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1
	Calcium MF6AN1

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
Chromium PBW01	
Nickel MF6AL4L	
Potassium PBW01	
Copper PBW01	
Cobalt MF6AL9 , MF6AL4L	
Barium MF6AN1	
Zinc PBW01 , MF6AN1	
Beryllium MF6AN1	
Antimony MF6AL4A	
Cadmium MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AM0 , MF6AM1	
Iron MF6AN1	
Manganese MF6AN1	
Blanks	ICP_AES
ND05	<p>The following samples have analyte results greater than CRQLs. The associated ICB analytic results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.</p> <p>LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL4S, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A</p>
Arsenic LCS	
Barium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L	
Nickel LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1	
Thallium MF6AL4A	
Manganese MF6AL4A	
Iron LCS	
Blanks	ICP_AES
ND06	<p>The following samples have analyte results greater than CRQLs. The associated CCB analytic results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.</p> <p>MF6AL4A, LCS, MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4S</p>
Vanadium MF6AL4A	

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
	Calcium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Nickel LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Potassium LCS
	Copper LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L , MF6AL4A
	Barium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Cobalt LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AM0 , MF6AM1 , MF6AL4L
	Aluminum LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Beryllium LCS
	Antimony MF6AL4A
	Thallium MF6AL4A
	Cadmium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AL4S , MF6AL9
	Magnesium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Iron LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Manganese LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L , MF6AL4A
Blanks	ICP_AES
ND15	The following samples have analyte results greater than or equal to MDLs. The associated ICB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Antimony LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL4S , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AM1
	Potassium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
Blanks	ICP_AES
ND16	The following samples have analyte results greater than or equal to MDLs. The associated CCB analyte results are less than or equal to -MDLs but greater than or equal to -CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
	Sodium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
	Barium LCS
	Potassium LCS , MF6AK6 , MF6AK7 , MF6AM2 , MF6AM3 , MF6AM4 , MF6AM5 , MF6AM6 , MF6AM7 , MF6AL4 , MF6AL4D , MF6AL5 , MF6AL6 , MF6AL7 , MF6AL8 , MF6AL9 , MF6AM0 , MF6AM1 , MF6AL4L
Blanks	ICP_AES
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
LCS	
	Chromium LCS
	Zinc LCS
	Potassium LCS
	Copper LCS

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Detection Limit

NDL1	Hg
	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF6AN1, MF6AK7, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM1 Mercury MF6AN1, MF6AK7, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM1

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Detection Limit

Detection Limit	ICP_AES
NDL	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J. MF6AL4L, MF6AN1, PBW01, MF6AK6, MF6AM2, MF6AM7, MF6AL7, MF6AL8, MF6AL9, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AM0, MF6AM1, MF6AL4A, MF6AK7 Vanadium MF6AL4L Calcium MF6AN1 Chromium PBW01 Nickel MF6AL4L Potassium MF6AL4L, PBW01 Copper PBW01 Sodium MF6AK6, MF6AM2, MF6AM7, MF6AL7, MF6AL8, MF6AL9, MF6AL4L Selenium MF6AK6, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4L, MF6AL4A Barium MF6AN1 Cobalt MF6AL9, MF6AL4L Beryllium MF6AN1, MF6AL4L Zinc MF6AN1, PBW01 Antimony MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL4D, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1, MF6AL4A Thallium MF6AK7 Cadmium MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AM0, MF6AM1 Iron MF6AN1 Manganese MF6AN1 Silver MF6AK6, MF6AK7, MF6AM2, MF6AL9, MF6AM0

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Matrix Spikes

Matrix Spikes	ICP_AES
NG07	The following Matrix Spike samples have percent recoveries less than 30% and post-digestion spike samples have percent recoveries less than 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Arsenic MF6AL4S
	Barium MF6AL4S
	Zinc MF6AL4S
	Manganese MF6AL4S
Matrix Spikes	ICP_AES
NG10	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries less than 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Vanadium MF6AL4S
	Selenium MF6AL4S
	Chromium MF6AL4S
	Antimony MF6AL4S
	Copper MF6AL4S
Matrix Spikes	ICP_AES
NG11	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J-. Nondetected analytes are qualified UJ.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Thallium MF6AL4S

National Functional Guidelines Report #03

Lab CHEM(Chemtech Consulting Group) SDG MF6AK6 Case 42764 Contract EPW09038 Region 6 DDTID 158758 SOW ISM01.3

Data Review Reports

Serial Dilution

Serial Dilution	ICP_AES
NL031	The following ICP-AES Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified U.
	MF6AK6, MF6AK7, MF6AM2, MF6AM3, MF6AM4, MF6AM5, MF6AM6, MF6AM7, MF6AL4, MF6AL5, MF6AL6, MF6AL7, MF6AL8, MF6AL9, MF6AM0, MF6AM1
	Calcium MF6AL4L
	Barium MF6AL4L
	Zinc MF6AL4L
	Magnesium MF6AL4L
	Manganese MF6AL4L
	Iron MF6AL4L